



gfirst need to feel out of the running

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### REGULARS



\* Data Statements · Games Update

\* Constructing a Compiler . Making Muric . The President is Missing Interceptor

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<ul> <li>Sprite Library         It's back to the ABC in this month         the library     </li> </ul>	45 is delve into		•	VOLUME 5 NUMBER 1	
Software for Sale	54			NUMBER 1	
The impressive sequel to Incarnine's					
Fernandez Must Die     Predetable commando style fan	57		۰		
First Steps     For such small phrases, error messa lot of understanding	58 ges take a		• •	ARGUS PRESS GROUP	
The Games - Winter Edition Seven more events await joystick ath			•	GROOF	
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Land and run film from a directory in press		1	ust property rights and be virtes of international copyright reasonal to Accor-		
* Set the Alarm Never wise last orders at the Dog and	37 For again		1	Regulation Publications Limited and may reproduction requires the prior written recursed of the Company 0 1908 : Distribution SM	
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A handy utility which can be used I	ry Basic er			ISSN	
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a free wacker submarine but it of wiping out the USSR's under these. Merropose's leading pooger and designer, Steve Miter, has given the task of connerting were better. Meier premises that the simulation will be far roose addition.

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Commoders are to be commoded for sticking with their PC compatibles are when professions can be purply of the original professions are proposed in the company is now proceeding a discount returners for educations exhibiting-man. Under the scheme, PC is studied at GD1 times(s) and GB3 (column) are being varyelend for GD0 and GB3 recognition of the column of the lease of the column of the column of the lease of the column of the column of the lease of the column of the column of the lease of the column of the column of the engine the critical network of the column of the engine the critical network of the column of the engine the critical network of the column of the engine the critical network of the column of the column of the engine the critical network of the column of the column of the engine the critical network of the column of the column of the engine the critical network of the column of the column of the engine the critical network of the column of the column of the engine the critical network of the column of the column of the engine the critical network of the column of the column of the engine the critical network of the column of the column of the engine the critical network of the column of the critical network of the engine the critical network of the critical network of the engine the critical network of the column of the critical network of the critical network of the critical network of the engine the critical network of the engine the critical network of the critical network

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### COMMUNICATIONS CORNER

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success waiting for third part companies that are prepared to support machines. Without these companies the CM and CIS mostle be good but fainted machines are would not enjoy their current success and appeal. Compiling this article be convinced one that whenever the last

### You and Boards

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CIA.99

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tratho version capable of aving programs five or sin, have necessit, and adds a lisk format contine and p section keys that pravide such as load and directs OM with This board sizes in

ROMs and a switch so you between the spotates.

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### Hi-Res Fill

Re Colle Censes Wilson





C64 PROGRAMMING

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tiet X,Y - peek (780) re t set. 0 if there is.

'Bi-res Fill' is the his stand-alone mashin

Joystick Cursor



By James Ken

See Estings on page 60



lost for words.



### **Games Update**

Alor of budget releases available th month - hands if you're short of the opermies this month

et menden quiet mende nith cely a lier fall relivant an the toffware companies held back coape table for the main admin offendors. It is however, a pietient of budget games arralated survivoidy betting for the odd probest money games with it must be said, that a lor of these takes are previously fold force money.

Full Price Titles Archeste besking for a barger

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bouncing out to the corner flag and save the relevant. The charges were to want the game finished, as yall the pin. Asset theges Stemdene sees you ce trade and what trials they are. Apart it ever recks and other hazards, there is usualises problem of posting believes to the trials of the characteristics.

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and \$1000 tax sees for machine code

64 PROGRAMMING

Using the Utility

# Short Interlude

By Michael Tinker

a lot master to use particularly



# The day Roger Jackson sent his first mailshot.



produced a great looking little budget printer with a 20 pin head.

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Bresident fonts available and its high-density laster helped me producer a really professional markhos.

THIS impressed by the according half distriction go of EXIQUE and EXIQUE and the standard TA butter. This impressed by the special push stack feature that allows the EXIA 100 the lowest possible trust cell and its stalls to be only continued.

> treas impressed by the books buston front control of flut makes using the printer an absolute cheese. But most of all, I was particularly impressed with my Because my Star LC36-99 was so incorporative.





Orjustalitelings you say sign

## May I Interrupt

C64 PROGRAMMING

Table I

AME REVIEW



### Football Manager II

See The Control of th

# Extension

single key press with this basic willing By James Klienn

### Constructing a



launch into the next two programs in the FCL compiler series – the code generator and the assembler

Ithough codegen may look earlier complicated, 20 december complicated, 20 december 10 december 11 december 11 december 12 dece

abouty or prints interestive uniques of these library residues simply reside a cult to the SYSLIB library, observed as cult to the SYSLIB library, observed in transfers because the source size of other residues included in the control of the cont

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the correct format. Once this is don work can then begin on the prograised.

The code is read one line at a tin and openiod is passed to the social, some codes require speasads and each restine known how many openands it needs not reads them or required. There are no dataset blocks of rousiness; these handling paradocodes 6-33 and those handling paradocodes 6-33 and those handling codes 270 to 191. The lazur set of codes are the knywords.

propagato large track of hom man lines are being presented into the ASM (See The early problem that me arise here in the clark space become source, the process still about. If, stang code generation, a "No Implication" message appears, assisting still problem than been found. The may indicate an error in compile While was the analysis of the opposision will need to add curra frees it codeput. If you design to a council the

Getting Started

The program should be loaded as

\$8000 as in 5ds \$8000 means address

# P ROGRAMMING a numeric literal was set of range, i.e. too big. Biggal addressing mode indicator

listed anyway so cely the message is displayed. Assemble Error Messages

Assemble Error Messages
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that a symbol has been reference
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Bigal Operand Self — occurs whe
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a manusceis was capected but southing the was found instead. Madag operand error - an operand was especial but was not found. Data file error - (fe is missing or possibly the data is fashly or fel. Syntax senar - this is a general manuage, prossibly indicates a bad

hare specified an incontect inde Symbol cable full - sacrethly continue due to lack of a workspare.

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Example of an assembly language source program. 10 | Example program 20 |

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combination of symbol label as institution in like 19. Lines 200-21 show how you may place these or separate lane. Remember that the old directive not only sets the code origin 1 also sets the fall load address on the code origin 1 also sets the fall load address on the code origin 1 also sets the fall load address on the code origin 10 also sets the fall load address of sets of the code of the code

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See Burings on page 64

COMMODORE





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DATEL ELECTRONICS

























# CDATEL ELECTRONIC

Complete disk with all four utilities

# DATEL ELECTRONICS









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absorbed with programming your 64 that you've been

again or even worse last orders at the Dor and Fox By Nick Gregory

## Hires/ Multicolour

Plotter

Sacrifice your horizontal resolution to can multicolour and high resolution mode By Daniel Answri



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## I-C-P-U-G

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# Making Music

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program in memory so it doesn't matter how the program was loaded – from tape or disk, – at normal or turbo spe

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REPREMIBER all learnes are built in and available at the touch of a key All features with both TAPE and DISK. (Except multips



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SALES ONLY TECHNOCAL COM-

# The President is Missing



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# Sprite Library

It's back to the ABC in this month's delve into the

By Mike Beni

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flasses. Before reasing the program you will need to recompater and type directly following.

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CAPITALS
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### The mysteries of the CP/M+ context editor explained By Alon J. Wills

## CP/M+

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and appears was the cerem despite and mentioned with the cerem despite and mentioned her I could make use I may see operating soons.

I soon found not have CP/M had not be able to ready seeking appears. I make the to ready sold to the cerem of the cere

Bloomby I saw a series of another on CP 704 and 10-128 is I have conveniently a desired a hardwarf community. I desired a hardwarf community is a series of the convenient of the transient program on people of a the CP 1044 system dis. I reserve propose, D, will be demonstrated and the most interpolated that the confidence of the convenient of the program has were understanding of the program has been understanding of the program has been convenient. Die and was impossible to sum, but DD is not way of receiving units convenient on the convenient of the program has convenient on the convenient of the program has convenient on the convenient of the program has been convenient on the convenient of the program has been convenient on the convenient of the program has convenient on the convenient of the convenient of the program has been convenient on the convenient of the program has been convenient on the convenient of the convenient

not perform its usual role, leader character painter called CP, who layelable, is used for postcloring a politic. This of the buffer may be buffer. This of the buffer may lear postcloring amount to top law postcloring down the lift I side. The text being the areast where plotting takes place. Here the CP trans hove where it is since, to it is important to use C the mart of the buffer.

emoting local time in the without a didde expense of a more solvad order.

I have compiled a emission or it is a commande used to this article as would be useful to have them at bot reference as the exercises seeded. To make some that ID is the CPVM-disk near DR at the CPVM-disk near DR at

### Loading ED

past on company memory resonance payment shalt. Place the CP/Mcontaining ID in the default drive switch on the drive and the comonely if 1250. The system data suts boot and stop with the CP system possest A-2. At the precent the following:

A od sextast pose RETURN key be file test, tat is used for demon tration purposes only and in realit, ny file name can be used. The Ja how the file name is used in the Asset Operational Mod

### D has two modes - CO ad INSERT. In COMMA

diaglay in 2°. In this most communicacion be entered one at a time or of more than one continued in required in a containment her wide one command federing the other, spanes are not here the CRSR algies and left may have been a contained by the conlained to the contained on the conlained on the contained on th

and a second patterns of the consider for the second for the prompt of the second for the prompt of the second for the second

### The next step is to enter

stay matter to correct missaes used has been instructed data a file to in with checking the text before it RETURN key in present. At this sing it does not master if the common better and its upper or lower one, bei work, equally well, with the sucception of the letter i which mis be in lower ones. Easter the INSERT command lett in the ED present, A lower case letter if will result in each being deplayed in vill result in each being deplayed.

## **Context Editor**

the following lines of text and poss RETURN at the end of each line. My dear son James, the head of the

My dear sen James, the head of th lamly, fied on 2 September 1834. Thus death, or rather the conquere of the law enems.

Braceles of the
Furthy Tree ga, and so further.

When line 6 prompt is displayed out
CONTRING. A STREET line 6.

CONTROL 2 (CONTROL MAY A tegether) and perus the RETURN is. The CONTROL 2 sequence will a be displayed on the screen. The serve display should now look like the:

NEW FILE

I. My dear see James, the head of he family, it does not 2 September 1834. I. This doubt, or either the conquerer of the last enough. II. Helly wald, hitherts shall the monodate Faveshele of the I. Family Tree go, and no further.

The CONTEGL Z sequence resische off line roumbering and forces ED 3 resiste the COMMAND rounds. To sur the file for bitson one, enter the EXT command latter E at the perceipt an piece the RETURN key. ED soft up the file text. List and make a backing only. This file will be used in concease at demonstrate versions.

The Buffer

go a brief description of the might help you to undercomplexity. Test is entered. I

one be determined by the GV comsolvered at the prompt fedorwed I RETUEN key, the dapter or screen will give free space; buffer when the command is energial screen will display 38271/38491. LINE NUMBER command for affirm movement through the li-

allows movement through the is sent in the before and in excent controlling a line souther at the pr The line indirect in allowing the controlling and the line Libert corn to the line in the line in the line and requires a feebre common chapte in the line is related to a part the CP at the sent of the buffer a part the CP at the sent of the line of the line in the line in the line in the ID then center the COMM ID then center the COMM in the CP at the sent of the line premap 1.5. Each fully at their premap 1.5. Each fully at their premap 1.5. Each fully at their land allowing the line in the line in the line deplay to a line in the line in the buffer. The line is more than and buffer. The line is more the line in the line sent of the buffer and o I

print the file.

Virwing on Existing Fi

Viewing an Existing F

went to view at one time and one of the A commands at it promps, then press the RETUR

Saving Test File

The HEAD OF FILE command I H, saves the contents of the mossuffer without leaving ED and seallows re-odding without has load ED again.

If you make a mess of the t and want to return to the origithen use the OHIGINAL conleare O. This command will all all changes rande to the text of

by service. The G command diffirm from
the E and B commands as you as
and the confirm the validity of the
command by the presence of (1/N)
ever the confirm the validity of the
command by the presence of (1/N)
key and loses the computer and dail
defer to do the nest.

D.
D. Londing from an Existing File

Now In get down to the secient we the of edding a new file. To re-call to previously extend into a file enter the process of the second into a file enter the process of th

ofking. Use the combined APPE #A and PAGE 6P commands display text on the serror from boffer. The serror will display fedowing.

A > ed text.(3)

the family,
2 died on 2 September 1834.
2. Thus death, or suber the conque
of the last enemy.
4. hath said, bitheria shall investible Branches of the

I'm afraid space docus't print the whole article, space for the concluding. See liables on page 63



Wina Bionic Arm!





## Interceptor



To find out all you need to

# Know

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TRACK SUIT MANAGE

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this making to be of the pregnoss much not Universately at the moment we cannot displicate C16 Plos/4 consists. However programs for these machines be available on the clok.

What programs are available?

At the too of such article you will find a stop-central

dissing making

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OR TOOL UNIVA VIDIO — A clought 80 column character obeging for the CEST place file.

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# The Games - Winter Edition





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## Listings

Get it right first time with our delecte program system for the C64.

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eptionally, [SSPC4]. Next type amorbio linguish this means delete it again, No or four times or is the the shift key down. A list of these

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by Eric Doy

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# Listings

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### LISTINGS



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